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PATENT SPECIFICATION

683,932

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No. 4848/51.

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Index at acceptance:—Classes 66, D3b2(c: x), D6; and 125(i), A7.

COMPLETE SPECIFICATION

Improvements in or relating to Brush Stripper and/or Liquid Sealer

I, LEO LAWRENCE KELLETT, a citizen of the United States of America, of 4734, Summit Street, Kansas City, Missouri, United States of America, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to attachments for liquid containers such as bottles adapted for disposition within the neck of the bottle and capable when placed in use, of performing a number of functions, namely, that of stripping of a brush of excess liquid after the same has been dipped into the container; forming the brush into a particular desired cross sectional contour; sealing the contents of the bottle against the atmosphere for a period of time after the brush has been withdrawn therefrom; and preventing spilling of the contents of the bottle upon accidental tipping of the same.

It is accordingly the most important object of the present invention to provide a device as above explained, having a funnel-like body provided with a pair of opposed flexible lips at one end thereof contoured to the shape desired for the dipped brush, and made of flexible material.

Another important object of the present invention is to provide a device for sealing the contents of a bottle wherein the lips are so formed as to receive a small quantity of the excess liquid stripped from the brush, which liquid, depending on the viscosity of the fluid gradually seeps back into the bottle and maintains the contents thereof sealed while seeping takes place.

Another object of the present invention is to provide a funnel-like body wherein the same is slit transversely intermediate the ends thereof at diametrically opposed points to present a pair of flexible lips that yieldably bear against the brush as the same is being removed from the bottle to strip the excess liquid therefrom, shape the brush and collect a quantity of the removed liquid to present an air-seal.

A further object of the present invention is to provide a combined brush stripper and liquid sealer having the aforesaid opposed lips formed and contoured to prevent spilling of the contents of the bottle when the same is tipped over.

The present invention provides a combined brush stripper and/or liquid sealer comprising a funnel-like member adapted for fitting within the neck of a liquid container, said member having a pair of opposed, flexible lips at the apex thereof.

The present invention further provides a combined brush stripper and/or liquid sealer comprising a tubular body adapted for fitting within the neck of a liquid container; and a pair of opposed lips depending from the normally innermost end of said body, said lips converging as the lowermost free ends thereof are approached.

The present invention further provides a combined brush stripper and/or liquid sealer comprising a tubular body adapted for fitting within the neck of a liquid container; and a pair of opposed, substantially **U**-shaped lips each having the top edge thereof integrally joined with the normally lowermost edge of said body.

Other features and advantages will become apparent as the following specification progresses, reference being had to the accompanying drawings, wherein:

Figure 1 is a side elevational view of

a liquid container and a brush-closure construction, parts being broken away to illustrate in elevation, a combination brush stripper and liquid seal for containers made in accordance with the present invention.

Fig. 2 is a top plan view of the device *per se*.

Fig. 3 is a bottom plan view thereof.

Fig. 4 is a side elevational view of the device.

Fig. 5 is a substantially central, vertical, cross-sectional view taken on line V—V of Fig. 4.

Fig. 6 is a cross-sectional view taken at right angles to the view of Fig. 5 showing the device in a container and illustrating the use thereof with a brush; and

Fig. 7 is a bottom plan view of a slightly modified form of the invention.

The problems that are overcome through use of the device relates particularly to the field of fingernail polish, including not only the hazard of spillage because of accidental tipping of the containers therefor, but the difficulties encountered in drying of the contents of the containers while in use and the desirability of removing excess polish from the brush prior to application to the fingernails as well as forming the brush to facilitate such application.

The entire assembly of parts is illustrated in Fig. 1 of the drawings and includes a conventional bottle 10 for fingernail polish 12 having a relatively long, narrow, externally threaded neck 14. An internally tapped cap or closure 16 having a handle 18 thereon is adapted for fitting over the neck 14 and is provided with a brush 20 mounted in the usual manner within a ferrule 22. The attachment hereof that is adapted to be inserted within the neck 14 of bottle 10, as is most clearly illustrated in Fig. 6 of the drawings, is made in its entirety from a suitable lightweight, yet sturdy, flexible material such as plastic material and includes a tubular body portion 24 that is cylindrical to conform with the neck 14 of the particular bottle 10 chosen for illustration. The outside diameter of body portion 24 is substantially the same as the inside diameter of neck 14 whereby to present a relatively tight fit when the body 24 is inserted into neck 14. The uppermost end of body 24 is provided with an out-turned integral flange 26 that overlies the uppermost end of neck 14 and is clamped to the bottle 10 by an internal annular flange 27 forming a part of the cap 16 when the latter is threadably mounted upon neck 14.

Body 24 is provided with a pair of opposed, elongated, transverse slots 28 and a longitudinally extending slot 30 for each slot 28 respectively, each slot 30 communicating with its corresponding slot 28 and being perpendicular thereto. This slot construction presents a pair of opposed, elongated lips 32 and 34 that are substantially U-shaped in cross-section. The normally uppermost edge of each lip 32 and 34 respectively, is integrally joined with the lowermost edge of the tubular body 24, presenting arcuate lines of hinge or flex 36 and 38 respectively. The bights of lips 32 and 34 converge as the lowermost ends thereof are approached and are arcuate in cross-section throughout the entire lengths thereof presenting an elliptical opening 40. Lips 32 and 34 are additionally provided with a pair of substantially flat opposed side walls 42 and 44 respectively, the two side walls 42 of the lip 32 extending toward the two side walls 44 of the lip 34. Accordingly, the slots 30 define one longitudinal edge of the side walls 42 and 44 while the slots 28 form the uppermost edges of side walls 42 and 44.

It is to be noted in Fig. 2 of the drawings that the side walls 42 of lip 32, diverge as slots 30 are approached in one direction and converge as the elliptical opening 40 is approached in the other direction.

The side walls 44 of the lip 34 are formed in the same manner. Manifestly, the lips 32 and 34 are flexible and it is to be noted further that the extent of flexibility of the lips 32 and 34 at their lines of hinge 36 and 38, depends upon the length of the slots 28.

The device is placed in use by removing the cap 16 in the usual manner and as the brush 20 is moved upwardly as indicated by the arrow in Fig. 6, and pulled through the elliptical opening 40, excess polish 12 will be scraped from the sides of brush 20. Because of the elliptical shape of opening 40, brush 20 will be simultaneously formed to adapt the same advantageously to use in applying polish 12 to the finger nails. As the brush 20 is thus stripped by the lowermost arcuate edges of lips 32 and 34 defining elliptical opening 40, a substantial amount of the removed polish 12 will collect as at 46 between the lips 32 and 34 and some of such excess liquid 12 will manifestly collect on and depend from the lowermost ends of lips 32 and 34, all as indicated in Fig. 6 of the drawing. While brush 20 is in use, applying the polish 12 to fingernails, the collection 46 of the liquid 12 will gradually seep away and drip downwardly until the opening 40 is finally

clear.

It has been found that the liquid body 46 will seal the contents 12 of bottle 10 against entrance of air for a considerable period of time and usually at least long enough to permit the completion of one fingernail whereupon the brush 20 is again dipped into polish 12 and the sealing process is repeated. Actually, the seal remains much longer than the average time needed to complete several fingernails with a single dipping of brush 20. It has been found also that because of the particular shape, contour and disposition of lips 32 and 34, accidental tipping of the bottle 10 will not cause damage or loss of liquid 12 because of out-flow thereof from bottle 10, even though the brush 20 is not within the bottle at the time. Manifestly, the amount of liquid 46 that is collected between the lips 32 and 34, the time consumed in clearing the opening 40 by redripping of the collection back into bottle 10 and the effectiveness in preventing spilling upon accidental tipping of bottle 10 is directly dependent upon the viscosity of the polish 12. Various changes can be made to adapt the device to liquids of different viscosities such as changing the sizes of slots 28 and 30 and varying the size and shape of opening 40 to approach progressively the type of opening provided for by the form shown in Fig. 7, hereinafter described. For the most part, however, almost all polishes now on the market will not flow from the container 10 when the same is overturned and a substantial amount of the same will collect as at 46 in the manner above described.

Because of a relatively tight frictional fit of the body 24 within the neck 14, the entire device will not pull out of the container 10 when brush 20 is removed therefrom and will not become displaced from the neck 14 when bottle 10 is tipped over.

While the modification of Figs. 1 and 6 inclusive, just described, has been produced primarily for use with fingernail polish, it is to be understood that the same may have other and many varied uses. In this connection, it is contemplated that, in lieu of or in addition to the liquid seal above described, a mechanical seal can, also, be produced by forming the lips of the device in a slightly different manner as indicated in the modified form of Fig. 7.

In all respects, the device is much the same as above set forth with the exception that in lieu of an elliptical opening 40, there is provided a relatively narrow, elongated opening 100 provided by lips 102 and 104. If desired, the lowermost straight edges of the lips 102 and 104 may be in normal contacting relationship, thereby fully sealing the contents of the bottle against admittance of air. In all other respects, lips 102 and 104 are formed precisely the same as lips 32 and 34. Lips 102 and 104 are substantially U-shaped in cross-section, the bights thereof being arcuate at hinge lines 106 and 108 respectively. Instead of being arcuate in cross-section throughout the lengths thereof as provided for in lips 32 and 34, the lines 102 and 104 have their cross-sectional arching progressively lengthened as the lowermost ends thereof are approached and until such innermost edges present a relatively straight line as indicated at 100.

The modification of Fig. 7 is adapted for use wherever members such as penpoints, are to be inserted into the container and where it is not necessary to be concerned about the difficulty of inserting the same as in the case of the highly flexible brush 20. In this connection, the lips 32 and 34, being of a highly flexible nature and the provision of the elliptical opening 40, permits insertion of the brush 20 without causing the same to become frayed at the end thereof and causing damage to brush 20.

While the modification of Fig. 7 is particularly adapted for use with fluids of relatively high viscosity, it is to be understood that in the case of the modifications of Figs. 1 to 6 inclusive, while a sufficient collection 46 is presented to present an effective seal, by the time the brush 20 is replaced into the bottle, such collection is not so great as to impede the ease in which brush 20 can be reinserted.

One of the salient features of the invention, therefore lies in the utilization of the liquid itself because of its inherent viscosity in co-operation with the particular formation of various elements of the device itself to accomplish the objects of anti-spill and prevention of air contact with the contents of the container, particularly at a time when such protection is most needed, i.e., during actual use.

What I claim is:—

1. A combined brush stripper and/or liquid sealer comprising a funnel-like member adapted for fitting within the neck of a liquid container, said member having a pair of opposed, flexible lips at the apex thereof.

2. A device according to claim 1, wherein each of said lips is arcuate in cross-section, presenting an elliptical opening for the member at the outermost free ends of the lips.

3. A combined brush stripper and/or liquid sealer comprising a tubular body

adapted for fitting within the neck of a liquid container; and a pair of opposed lips depending from the normally innermost end of said body, said lips converging as the lowermost free ends thereof are approached.

4. A device according to claim 3, wherein each lip has a pair of opposed side walls, the side walls of one lip extending toward the side walls of the other lip.

5. A device according to claim 4, wherein the side walls of each pair thereof converge as their lowermost free ends are approached.

6. A combined brush stripper and/or liquid sealer comprising a tubular body adapted for fitting within the neck of a liquid container; and a pair of opposed, substantially U-shaped lips each having the top edge thereof integrally joined with the normally lowermost edge of said body.

7. A device according to claim 6, wherein the top edge of each lip adjacent said body is arcuate, and the bottom edge of each lip is substantially straight.

8. A combined brush stripper and/or liquid sealer constructed substantially as herein described with reference to Figures 1 to 3 or Figure 7 of the accompanying drawings.

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Agents for the Applicant.

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683,932 COMPLETE SPECIFICATION
1 SHEET

This drawing is a reproduction of the Original on a reduced scale.

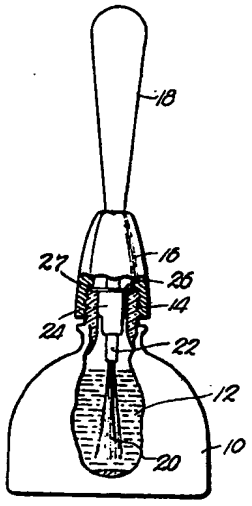

Fig. 1.

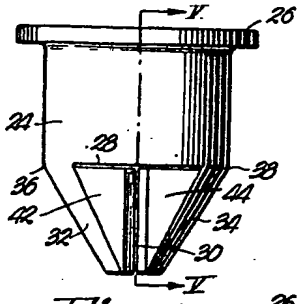

Fig. 4.

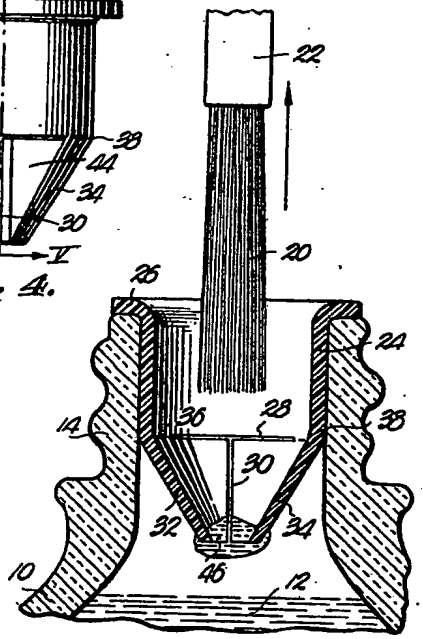

Fig. 6.

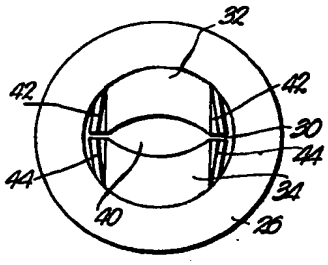

Fig. 2.

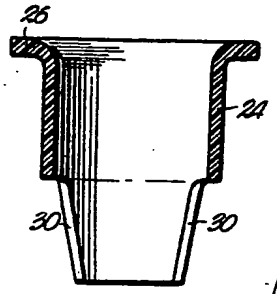

Fig. 5.

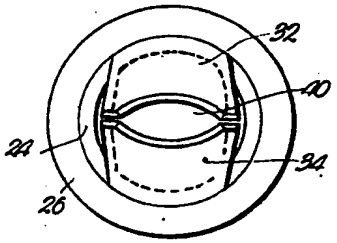

Fig. 3.

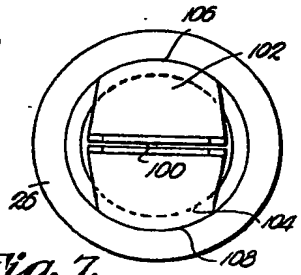

Fig. 7.